Title (en)

Circuitry with gate line crossing semiconductor line at two or more channels

Title (de)

Schaltung mit Gitterzeilen, die an zwei oder mehr Kanalbereichen eine Halbleiterlinie kreuzt

Title (fr)

Circuit avec des lignes de portes croisant des lignes semiconductrices à deux ou plusieurs canals

Publication

EP 0721214 B1 20050928 (EN)

Application

EP 96300049 A 19960103

Priority

US 36798495 A 19950103

Abstract (en)

[origin: EP0721214A2] Circuitry formed at a surface of a substrate includes first and second lines (180,182) in first and second layers of the circuitry. The first line (180) includes semiconductor material and extends between first and second connecting points (190,192) at which it connects electrically to other components. The second line (182) is connected (188) to receive a gate signal, and crosses the first line (180) in two or more channel regions (184,186). The first line (180) includes a channel in each channel region, and the channels are in series. The second line (182) conducts the gate signal to all of the channel regions. The first line (180) includes charge carrier sources and destinations positioned so that conductivity of the first line between the first and second connecting points is controlled by the gate signal. The first layer can be polysilicon, and the second layer can be polysilicon or metal. The first line can be undoped in the channel regions (184,186) but heavily doped in other areas. Each of the first and second lines can include an angle of approximately 90 DEG between two of the channel regions, forming a Crossed-L configuration. In an active matrix display or other array with M scan lines and N data lines, the first line (180) can be connected to the nth data line (172) and the second line (182) can receive the gate signal from the mth scan line (170). <IMAGE>

IPC 1-7

H01L 23/522; H01L 23/532; G02F 1/136; H01L 27/12

IPC 8 full level

H01L 23/522 (2006.01); **H01L 21/768** (2006.01); **H01L 21/822** (2006.01); **H01L 23/482** (2006.01); **H01L 23/532** (2006.01); **H01L 23/538** (2006.01); **H01L 27/04** (2006.01); **H01L 29/786** (2006.01); G02F 1/1368 (2006.01)

CPC (source: EP US)

H01L 23/4825 (2013.01 - EP US); **H01L 23/53257** (2013.01 - EP US); **H01L 23/5386** (2013.01 - EP US); G02F 1/1368 (2013.01 - EP US); G02F 2202/104 (2013.01 - EP US); H01L 2924/0002 (2013.01 - EP US); H01L 2924/3011 (2013.01 - EP US)

Cited by

US9905624B2; US10461140B2; US10680049B2; US11063102B2

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EP 0721214 A2 19960710; **EP 0721214 A3 19980603**; **EP 0721214 B1 20050928**; DE 69635218 D1 20060209; DE 69635218 T2 20060323; JP 2006173600 A 20060629; JP 2010153912 A 20100708; JP 3952517 B2 20070801; JP 4648829 B2 20110309; JP 4843719 B2 20111221; JP H08236780 A 19960913; US 5608557 A 19970304

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